

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 11-15 are pending in the present application. Claim 10 is cancelled without prejudice and Claims 11-15 are added by the present amendment, Claims 1-9 were previously cancelled. Support for amendments to the claims is found in the specification as originally filed, at least on page 108, line 8 to page 115, line 23. Thus no new matter is added.

In the outstanding Office Action, Claim 10 was rejected under 35 U.S.C. §103(a) as unpatentable over Endoh et al. (U.S. Pat. No. 6,654,337, herein “Endoh”) or Shimizu (JP 10-222874) in view of Fukushima et al. (U.S. Pat. No. 6,973,016, herein “Fukushima”); Claim 10 was rejected under 35 U.S.C. §103(a) as unpatentable over Okamoto et al. (EP 1158497, herein “Okamoto EP”) in view of Fukushima; and Claim 10 was rejected under 35 U.S.C. §103(a) as unpatentable over Okamoto et al. (U.S. Pat. No. 6,587,417, herein “Okamoto US”) in view of Fukushima.

Before turning to the outstanding art rejections, it is believed that a brief review of the present invention would be helpful.

In this regard, the claimed invention recites that data recorded in an information recording medium is allocated in a two-dimensional manner; an inner parity PI (Parity in) is added in a row direction as an error correction additional bit, and an outer parity PO (Parity out) is added in a column direction, as is shown in a non-limiting example illustrated in Figures 31 and 32. Thus, high error correction capability using erasure correction and vertical and horizontal repetition correction processing is provided.

As shown in a non-limiting example illustrated in Figure 32, 32 sectors from sector 0 to sector 31 are sequentially arranged vertically to configure an ECC block. When a scratch is made on the surface of an information recording medium in HD DVD, it is important that

precise information reproduction can still be carried out using error correction processing. In the claimed invention, recording density is enhanced to ensure high capacity corresponding to high image quality video. However, as a result, where 1 ECC block includes 16 sectors as in the current DVD, a length of physical scratch which can be corrected by error correction is reduced. To address this problem the claimed invention provides a structure in which 1 ECC block includes 32 sectors. Thus, maximum length of a surface scratch of an information recording medium capable of error correction can be increased, and compatibility or format continuity of the current DVD ECC block structure can be maintained.

In addition, in the claimed invention, the sector is divided into plural portions, each portion becoming a multiplication code (small ECC block). As is shown in a non-limiting example illustrated in Figure 32, sector data is allocated alternately at the left and right on a 172 bytes-by-172 bytes basis, and the allocated data are grouped separately at the left and right (the data belonging to the left and right groups is in the form that a respective item of data is interleaved in a nesting manner). These divided left and right groups are collected by 32 sectors, as shown in Fig. 32, and small ECC blocks are formed at the left and right. For example, “2-R” in Fig. 32 corresponds to a sector number and a left or right group identification sign (for example, second right side data for “2-R”) and L in Figure 32 denotes the left.

With respect to newly added Claims 11-15, Applicants respectfully submit that the features recited in these claims are not described or suggested in the cited Endoh, Fukushima, or Okamoto EP/US references.

Endoh describes a pit track pitch in a read-in area and a track pitch in a groove. Fukushima describes a mirror area 203 between a data recording area 204 and an embossed area 202 in a lead-in area 201.¹ Okamoto EP/US describes a system in which it is required

¹ See Fukushima, col. 11, lines 58 to col. 12 line 3 and Figure 2.

that the recording density in the linear direction of information recording in the header field 3, 8 be made lower than the recording density in the linear direction of information recorded in the user data recording field 11.²

However, none of these references considered individually or in combination describes or suggests an information storage medium wherein a system lead-in area, a connection area located outside the system lead-in area, a data lead-in area located outside the connection area, and a data area located outside the data lead-in area are provided, a track pitch and a minimum pit length in the system lead-in area are longer than a track pitch and a minimum pit length in the data lead-in area and the data area, an error correction code (ECC) block is formed from 32 consecutive scrambled frames, each left half row in an odd scrambled frame is exchanged for a right half row, each scrambled frame is arranged in the ECC block, one scrambled frame includes (172 bytes x 2) x 6 rows, 16 bytes of an outer-code parity (PO) are attached to each of 172 x 2 columns to form an outer code of RS (Read-Solomon) (208, 192, 17), and 10 bytes of an inner-parity code (PI) are attached to each of 208 x 2 half rows which includes the PO to form an inner code of RS (182, 172, 11).

Accordingly, Applicants respectfully submit that newly added Claims 11-15 patentably distinguish over Endoh, Fukushima, or Okamoto EP/US considered individually or in combination.

² See OkamotoEP, paragraph 0187.

Consequently, in view of the present amendment and in light of the above comments, no further issues are believed to be outstanding, and the present application is believed to be in condition for allowance. An early and favorable action to that effect is respectfully requested.

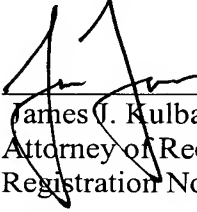
Respectfully submitted,

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